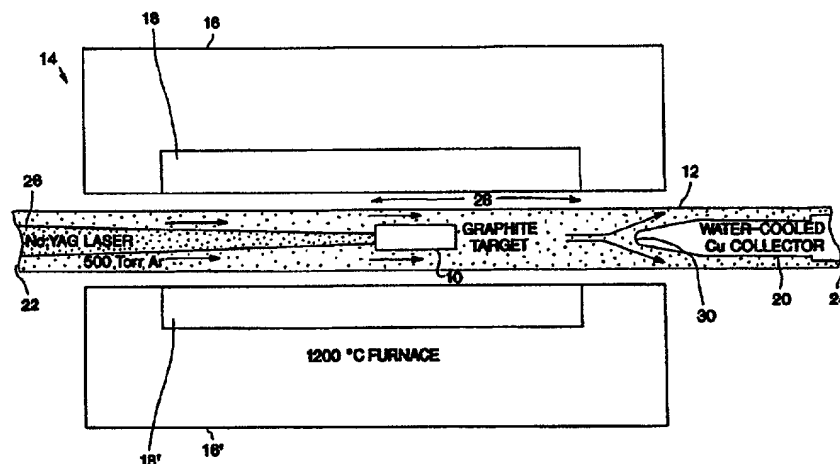




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(71) Applicant (for all designated States except US): <b>WILLIAM MARSH RICE UNIVERSITY [US/US]; 6100 South Main Street, Houston, TX 77002 (US).</b>			
(72) Inventors; and			
(75) Inventors/Applicants (for US only): <b>SMALLEY, Richard, E. [US/US]; 1816 Bolsover, Houston, TX 77005 (US). COLBERT, Daniel, T. [US/US]; 1911 Milford Street, Houston, TX 77098 (US). DAI, Hongjie [CN/US]; 365 Pescadero Terrace, Sunnyvale, CA 94086 (US). LIU, Jie [CN/US]; 5825 Guilfton #3214, Houston, TX 77081 (US). RINZLER, Andrew, G. [US/US]; Apartment 171, 6666 Chetwood, Houston, TX 77081 (US). HAFNER, Jason, H. [US/US]; 2129 Banks Street, Houston, TX 77098-5303 (US). SMITH, Ken</b>			
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(54) Title: CARBON FIBERS FORMED FROM SINGLE-WALL CARBON NANOTUBES



## (57) Abstract

A method for purifying a mixture comprising single-wall carbon nanotubes and amorphous carbon contaminate is disclosed. The method includes the steps of heating the mixture under oxidizing conditions sufficient to remove the amorphous carbon, followed by recovering a product comprising at least about 80 % by weight of single-wall carbon nanotubes. A method for producing tubular carbon molecules of about 5 to 500 nm in length is also disclosed. The method includes the steps of cutting single-wall nanotube containing-material to form a mixture of tubular carbon molecules having lengths in the range of 5-500 nm and isolating a fraction of the molecules having substantially equal lengths. The nanotubes may be used, singularly or in multiples, in power transmission cables, in solar cells, in batteries, as antennas, as molecular electronics, as probes and manipulators, and in composites.